

1. (original): An isolated protein complex having a first protein which is survivin or a homologue or derivative or fragment thereof interacting with a second protein which is a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT or a homologue or derivative or fragment thereof.

2. (original): The isolated protein complex of Claim 1, wherein said first protein is survivin and said second protein is a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT.

3. (original): The isolated protein complex of Claim 1, wherein said first protein is a first fusion protein containing survivin or a survivin homologue or fragment.

4. (original): The isolated protein complex of Claim 1, wherein said second protein is a second fusion protein containing a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT or a homologue or fragment thereof.

5. (original): An isolated protein complex comprising a first protein interacting with a second protein, wherein:

(a) said first protein is selected from the group consisting of

(i) survivin,

(ii) a survivin fragment capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, and

(iii) a fusion protein containing survivin or said survivin fragment; and

(b) said second protein is selected from the group consisting of

(1) a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,

(2) a fragment of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT and capable of interacting with survivin, and

(3) a fusion protein containing a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT or said fragment.

6. (withdrawn): A protein microarray comprising the protein complex according to Claim 5.

7. (withdrawn): A fusion protein having a first polypeptide covalently linked to a second polypeptide, wherein said first polypeptide is survivin or a homologue or fragment thereof, and wherein said second polypeptide is a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT or a homologue or fragment thereof.

8. (withdrawn): A nucleic acid encoding the fusion protein of Claim 7.

9. (withdrawn): A method for selecting modulators of the protein complex of Claim 5, comprising:

providing the protein complex;

contacting said protein complex with a test compound; and

detecting the binding of said test compound to said protein complex.

10. (withdrawn): The method of Claim 9, further comprising a step of generating a data set defining one or more selected test compounds, said data set being embodied in a transmittable form.

11. (currently amended): A method for selecting modulators of an interaction between a first protein and a second protein in a protein complex formed by said first and second proteins,

(a) said first protein being selected from the group consisting of

- (i) survivin,
  - (ii) a survivin homologue having an amino acid sequence at least 90% identical to that of survivin and capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,
  - (iii) a survivin fragment capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, and
  - (iv) a fusion protein containing survivin, said survivin homologue or said survivin fragment; and
- (b) said second protein being selected from the group consisting of
    - (1) HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,
    - (2) a homologue of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT having an amino acid sequence at least 90% identical to that of said protein and capable of interacting with survivin,
    - (3) a fragment of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT and capable of interacting with survivin, and
    - (4) a fusion protein containing a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, said protein homologue or said protein fragment, said method comprising:
      - contacting said first protein with said second protein in the presence of a test compound; and
      - detecting the interaction between said first protein and said second protein.

12. (original): The method of Claim 11, wherein at least one of said first and second proteins is a fusion protein having a detectable tag.

13. (original): The method of Claim 11, wherein said contacting step is conducted in a substantially cell free environment.

14. (currently amended) The method of Claim 11, wherein [the interaction between] said first protein and said second protein are contacted with each other [is determined] in a host cell.

15. (original): The method of Claim 14, wherein said host cell is a yeast cell.

16. (original): The method of Claim 11, wherein said determining step comprises measuring the amount of the protein complex formed by said first and second proteins.

17. (original): The method of Claim 11, further comprising a step of generating a data set defining one or more selected test compounds, said data set being embodied in a transmittable form.

18. (original): A method for selecting modulators of the protein complex of Claim 5, comprising:  
contacting said protein complex with a test compound; and  
detecting the interaction between said first protein and said second protein.

19. (original): The method of Claim 18, further comprising a step of generating a data set defining one or more selected test compounds, said data set being embodied in a transmittable form.

20. (currently amended): A method for selecting modulators of an interaction between a first polypeptide and a second polypeptide in a protein complex, said first polypeptide being survivin or a homologue or fragment thereof and said second polypeptide being a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT or a homologue or fragment thereof, said method comprising:

providing in a host cell a first fusion protein having said first polypeptide, and a second fusion protein having said second polypeptide, wherein a DNA binding domain is

fused to one of said first and second polypeptides while a transcription-activating domain is fused to the other of said first and second polypeptides;

providing in said host cell a reporter gene, wherein the transcription of the reporter gene is controlled by the interaction between the first polypeptide and the second polypeptide;

allowing said first and second fusion proteins to interact with each other within said host cell in the presence of a test compound; and

determining the expression of said reporter gene.

21. (original): The method of Claim 20, wherein said host cell is a yeast cell.

22. (currently amended): A method for selecting compounds capable of interfering with the interaction between a first protein and a second protein in a protein complex, wherein

(a) said first protein is selected from the group consisting of

(i) survivin,

(ii) a survivin homologue having an amino acid sequence at least 90% identical to that of survivin and capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,

(iii) a survivin fragment capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, and

(iv) a fusion protein containing survivin, said survivin homologue or said survivin fragment; and

(b) said second protein is selected from the group consisting of

(1) HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,

(2) a homologue of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT having an amino acid sequence at least 90% identical to that of said protein and capable of interacting with survivin,

(3) a fragment of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT capable of interacting with survivin, and

(4) a fusion protein containing a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, said protein homologue or said protein fragment, said method comprising:  
contacting said first protein with said second protein in the presence of a test compound and detecting the interaction between said first protein and said second protein; and  
contacting said first protein with said second protein in the absence of said test compound and detecting the interaction between said first protein and said second protein.

23. (original): The method of Claim 22, wherein said contacting steps are conducted in a substantially cell free environment.

24. (original): The method of Claim 22, wherein said contacting steps are conducted in a host cell.

25. (original): The method of Claim 22, wherein the first protein is a fusion protein containing survivin or said survivin fragment, and said second protein is a fusion protein containing a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT or said protein fragment.

26. (original): The method of Claim 22, further comprising a step of generating a data set defining one or more selected test compounds, said data set being embodied in a transmittable form.

27. (withdrawn): A composition comprising:  
a first expression vector having a nucleic acid encoding a first protein; and  
a second expression vector having a nucleic acid encoding a second protein, wherein:  
(a) said first protein is selected from the group consisting of  
(i) survivin,

(ii) a survivin homologue having an amino acid sequence at least 90% identical to that of survivin and capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,

(iii) a survivin fragment capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, and

(iv) a fusion protein containing survivin, said survivin homologue or said survivin fragment; and

(b) said second protein is selected from the group consisting of

(1) HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,

(2) a homologue of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT having an amino acid sequence at least 90% identical to that of said protein and capable of interacting with survivin,

(3) a fragment of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT capable of interacting with survivin, and

(4) a fusion protein containing a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, said protein homologue or said protein fragment.

28. (withdrawn): An expression vector comprising:

(a) a first nucleic acid encoding a first protein selected from the group consisting of

(i) survivin,

(ii) a survivin homologue having an amino acid sequence at least 90% identical to that of survivin and capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,

(iii) a survivin fragment capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, and

(iv) a fusion protein containing survivin, said survivin homologue or said survivin fragment; and

(b) a second nucleic acid encoding a second protein selected from the group consisting of

(1) HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,

(2) a homologue of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT having an amino acid sequence at least 90% identical to that of said protein and capable of interacting with survivin,

(3) a fragment of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT and capable of interacting with survivin, and

(4) a fusion protein containing a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, said protein homologue or said protein fragment.

29. (withdrawn): A host cell comprising the expression vector of Claim 28.

30. (withdrawn): A host cell comprising:  
a first expression vector having a nucleic acid encoding a first protein; and  
a second expression vector having a nucleic acid encoding a second protein, wherein:

(a) said first protein is selected from the group consisting of

(i) survivin,

(ii) a survivin homologue having an amino acid sequence at least 90% identical to that of survivin and capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,

(iii) a survivin fragment capable of interacting with a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, and

(iv) a fusion protein containing survivin, said survivin homologue or said survivin fragment; and

(b) said second protein is selected from the group consisting of



- (1) HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT,
- (2) a homologue of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT and having an amino acid sequence at least 90% identical to that of said protein and capable of interacting with survivin,
- (3) a fragment of a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT and capable of interacting with survivin, and
- (4) a fusion protein containing a protein selected from the group consisting of HDLC1, beta-actin, DNA helicase II, COPP, OSTP, SLC8A1, A2-CAT, said protein homologue or said protein fragment.

31. (withdrawn): The host cell of Claim 30, wherein said host cell is a yeast cell.

32. (withdrawn): The host cell of Claim 30, wherein said first and second proteins are fusion proteins.

33. (withdrawn): The host cell of Claim 30, wherein one of said first and second nucleic acids is linked to a nucleic acid encoding a DNA binding domain, and the other of said first and second nucleic acids is linked to a nucleic acid encoding a transcription-activation domain, whereby two fusion proteins can be produced in said host cell.

34. (withdrawn): The host cell of Claim 30, further comprising a reporter gene, wherein the expression of the reporter gene is controlled by the interaction between the first protein and the second protein.

35. (withdrawn): A method for providing modulators of a protein-protein interaction comprising:  
providing atomic coordinates defining a three-dimensional structure of the protein complex of Claim 5; and

designing or selecting compounds capable of modulating the interaction between the first and second proteins based on said atomic coordinates.

36. (withdrawn): The method of Claim 35, further comprising a step of generating a data set defining one or more selected test compounds, said data set being embodied in a transmittable form.

37. (withdrawn): A method for providing antagonists of a protein-protein interaction, comprising:  
providing atomic coordinates defining a three-dimensional structure of the protein complex of Claim 5; and  
designing or selecting compounds capable of interfering with the interaction between the first and second proteins based on said atomic coordinates.

38. (canceled): An isolated antibody selectively immunoreactive with the protein complex of Claim 5.

39. (new): The isolated protein complex of Claim 1, wherein said first protein is covalently linked to said second protein.